APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/539,210	03/30/2000	Shinobu Sumi	00213/LH	7836

7590   09/25/2003

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EXAMINER
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ART UNIT	PAPER NUMBER
2615	5

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _3/30/2000_ .

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-13_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-11_ is/are rejected.

7) ☒ Claim(s) _12-13_ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _3/30/2000_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All b) ☐ Some * c) ☐ None of:

        1. ☒ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _2,4_ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Drawings

1.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4)

because reference characters "101" and "102" have both been used to designate the

top gate line in Fig. 8. A proposed drawing correction or corrected drawings are

required in reply to the Office action to avoid abandonment of the application. The

objection to the drawings will not be held in abeyance.

Specification

2.   Applicant is reminded of the proper language and format for an abstract of the
disclosure.

The abstract should be in narrative form and generally limited to a single
paragraph on a separate sheet within the range of 50 to 150 words. It is important that
the abstract not exceed 150 words in length since the space provided for the abstract
on the computer tape used by the printer is limited. The form and legal phraseology
often used in patent claims, such as "means" and "said," should be avoided. The
abstract should describe the disclosure sufficiently to assist readers in deciding whether
there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information
given in the title. It should avoid using phrases which can be implied, such as, "The
disclosure concerns," "The disclosure defined by this invention," "The disclosure
describes," etc.

3.   The disclosure is objected to because of the following informalities:

a.   On page 21, line 17 the equation "Tp_old = n x (Tread+Ta+Tread)" should

read – Tp_old = n x (Treset+Ta+Tread) – due to the description given in the disclosure

on page 21, lines 1-5.

b.   On page 36, line 17 it refers to the "sixth" embodiment, however there is

no sixth embodiment.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   Claims 1-4 and 5-9 are rejected under 35 U.S.C. 102(b) as being anticipated by

Yamada (U.S. Patent 5,461,419).

Regarding claim 1, Yamada discloses in Fig. 12 a drive control method of a

photosensor (10) array including a plurality of rows, each having a plurality of

photosensors (10) arranged to form a matrix (col. 11, lines 18-27), comprising: a first

step for applying a reset pulse (ϕtgn) to a predetermined row of the photosensor (10)

array so as to initialize the plural photosensors (10) in the row; a second step of

applying a read pulse (ϕbgn) to the plural of photosensors (10) of the row after

completion of the initialization, after a charge accumulating period (τN) for accumulating

charges generated by light irradiation, and after a pre-charge operation in which a

predetermined pre-charge pulse (ϕpg) is applied to the plurality of photosensors (10), to

output the voltage generated by the charges accumulated during the charge

accumulating period (τN) as an output voltage (Vout) (col. 11, lines 2-17), wherein the

timings of applying the pre-charge pulse (φpg) and the read pulse (φbgn) for each row

are set not to overlap in time with each other, and the charge accumulating periods (τN)

for the rows have an overlapping period between at least two different rows (Fig. 2).

Regarding claim 2, Yamada discloses in Fig. 12 the drive control method for a

photosensor (10) system, wherein the reset pulses (φtgn) are successively applied to

the rows of the photosensor (10) array in the first step so as to successively initialize the

plurality of photosensors (10), and read pulses (φbgn) are successively applied to the

plurality of photosensors (10) in the second step after the initialization, after a

predetermined charge accumulating period (τN) and after completion of the pre-charge

operation performed by the pre-charge pulse (φpg) to output successively the voltages

generated by the charges accumulated during the charge accumulating period (τN) as

the output voltages (Vout) (col. 11, lines 2-27).

Regarding claim 3, Yamada discloses in Fig. 12 the drive control method for a

photosensor (10) system, wherein the applying period of the pre-charge pulse (φpg) and

the read pulse (φbgn) for each row in the second step is equal to the sum of the pulse

width of the pre-charge pulse (φpg) and the pulse width of the read pulse (φbgn).

Regarding claim 4, Yamada discloses in Fig. 12 the drive control method for a

photosensor system, wherein the applying period of the reset pulse (φtgn) for each row

in the first step and the applying period of each pre-charge pulse (φpg) and the read

pulse (φbgn) for each row in the second step is longer than the sum of the pulse width of

the pre-charge pulse (φpg) and the pulse width of the read pulse (φbgn).

Regarding claim **5**, Yamada discloses in Fig. 12 the drive control method of a

photosensor (10) system, wherein the applying period of the reset pulse (ϕtgn) for each

row in the first step and the applying period of the pre-charge pulse (ϕpg) and the read

pulse (ϕbgn) for each row in the second step is equal to the sum of the pulse width of

reset pulse (ϕtgn) in the first step, the pulse width of the pre-charge pulse (ϕpg) and the

pulse width of the read pulse (ϕbgn) in the second step.

Regarding claim **6**, Yamada discloses in Fig. 12 the drive control method for a

photosensor (10) system, wherein the charge accumulating period (τN) in the second

step is set at a period in which the applying time of the pre-charge pulse (ϕpg) and the

read pulse (ϕbgn) for each row in the second step constitutes a unit time.

Regarding claim **7**, Yamada discloses in Fig. 1 the drive control method for a

photosensor (10) system, wherein each of the photosensor (10) comprises a source

electrode (16) and a drain electrode (17) arranged with a channel region consisting of a

semiconductor layer (15) interposed therebetween, and a first electrode (19) and

second electrode (13) formed at least above and below the channel region with

insulating layers (18 and 14) interposed therebetween, wherein the charges are

generated and accumulated in an amount corresponding to the amount of light

irradiating the channel region (col. 4, lines 22-40).

Regarding claim **8**, Yamada discloses the drive control method for a photosensor

(10) system, wherein the reset pulse (ϕtgn) is applied to the first electrode (19) of the

photosensor (10) in the first step to initialize the photosensor (10); and the pre-charge

pulse (ϕpg) is applied to the drain electrode (17) of the photosensor (10) in the second

step, and the read pulse (φbgn) is applied to the second electrode (13) of the

photosensor (10) after completion of the pre-charge operation performed by application

of the pre-charge pulse (φpg) to output the voltage of the drain electrode (17) as an

output voltage (Vout) (col. 11, lines 2-17).

Regarding claim 9, Yamada discloses in Fig. 12 the drive control method for a

photosensor (10) system, wherein the applying period of the pre-charge pulse (φpg) for

each row and the read pulse (φbgn) in the second step is equal to the sum of the pulse

width of the pre-charge pulse (φpg) and the pulse width of the read pulse (φbgn) in the

second step.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada

as applied to claim 1 and 9 above, and further in view of Shoda et al. (U.S. Patent

6,429,898).

Yamada discloses in Fig. 12 a drive method control for a photosensor (10)

system, wherein the charge accumulating periods (τN) for the rows in the second step

are equal to or an integer number times as long as the sum. However, it is lacking the

teaching of setting the charge accumulating periods for the rows being set different from each other depending on the rows.

Shoda et al. discloses a drive control method for a photosensor (10) system, wherein the charge accumulating periods (Ts) for the rows are set different from each other depending on the rows (col. 4, lines 29-36 and col.7, line 66 – col. 8, line 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the photosensor used by Yamada with the teachings of Shoda et al. and set the accumulation times of the rows differently in order to avoid a shift in the apparent position of the image.

4.   Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada as applied to claims 1 and 9 above, and further in view of Izawa et al (U.S. Patent 4,870,493).

Yamada discloses in Fig. 12 the drive control method for a photosensor (10) system, wherein the reset pulses (ϕtgn) are applied to the rows of the photosensor (10) array in the first step, and the pre-charge pulses (ϕpg) are applied in the second step at the time interval equal to or an integer number times as long as the sum, and the read pulses (ϕbgn) are applied to each row (col. 11, lines 2-17). However, it is lacking the teaching of resetting all the rows simultaneously.

Izawa et al. discloses a driving control method for a photosensor, wherein the reset pulses are simultaneously applied to the rows of the photosensor array in the first step (col.3, lines 20-23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the photosensor used by Yamada with the teachings of Izawa et al. and reset all the rows simultaneously in order to avoid the picture element signal appearing on the horizontal signal lines corresponding to the preceding vertical scanning lines and therefore the coupling for the readout picture element signal can substantially be prevented.

Allowable Subject Matter

6.   Claims 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7.   The following is a statement of reasons for the indication of allowable subject matter: prior art does not teach or fairly suggest a drive control method for a photosensor system, wherein the reset pulses are applied in the first step to each row of the photosensor array at the time interval equal to or an integer number times as long as the sum, and after completion of the reset pulse application to all the rows, the pre-charge pulses are applied in the second step and read pulses are applied to each row in the order opposite to the order of applying the reset pulses to each row of the photosensor array in the first step.

Prior art also does not teach or fairly suggest a drive control method for a photosensor, wherein the reset pulses are successively applied in the first step to each row of the photosensor array at the time interval equal to or an integer number times as

long as the sum; the pre-charge pulses are applied in the second step in synchronism

with the first step, and read pulses are applied to each row in the order opposite to the

order of applying the reset pulses to each row of the photosensor array in the first step;

and after completion of the pre-charge voltage application and the read pulse

application, and after lapse of the sum of time, the pre-charge pulses are applied and

the read pulse is applied again to each row in the order equal to the order of applying

the read pulse to each row at the time interval equal to or an integer number times as

long as the sum of time.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Heather R Long whose telephone number is 703-305-

0681. The examiner can normally be reached on Mon. - Thurs.: 7:00 am - 4:30 pm, and

every other Fri.: 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Andrew Christensen can be reached on (703) 308-9644. The fax phone

number for the organization where this application or proceeding is assigned is (703)

872-9306.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 305-

4700.

hrl
September 16, 2003

NGOC-YEN VU
PRIMARY EXAMINER